

Test

5.1

- Rectangular Approximation Method \rightarrow LRAM, RRAM, MRAM

5.2

• Riemann Sums $\lim_{n \rightarrow \infty} \sum_{k=1}^n f(c_k) \Delta x = \int_a^b f(x) dx$

- NINT on calculator

5.3

- Properties of Definite Integrals p 285

• Avg. Value $av(f) = \frac{1}{b-a} \int_a^b f(x) dx$

• Mean Value thm. $f(c) = \frac{1}{b-a} \int_a^b f(x) dx$

5.4

- Fundamental Thm of Calculus

Part 1: $\frac{d}{dx} \int_a^x f(t) dt = f(x)$

Part 2: $\int_a^b f(x) dx = F(b) - F(a)$

- Total vs. net Area (Distance vs. Displacement)

- Analyze graphs with Antiderivatives (like #57)

5.5

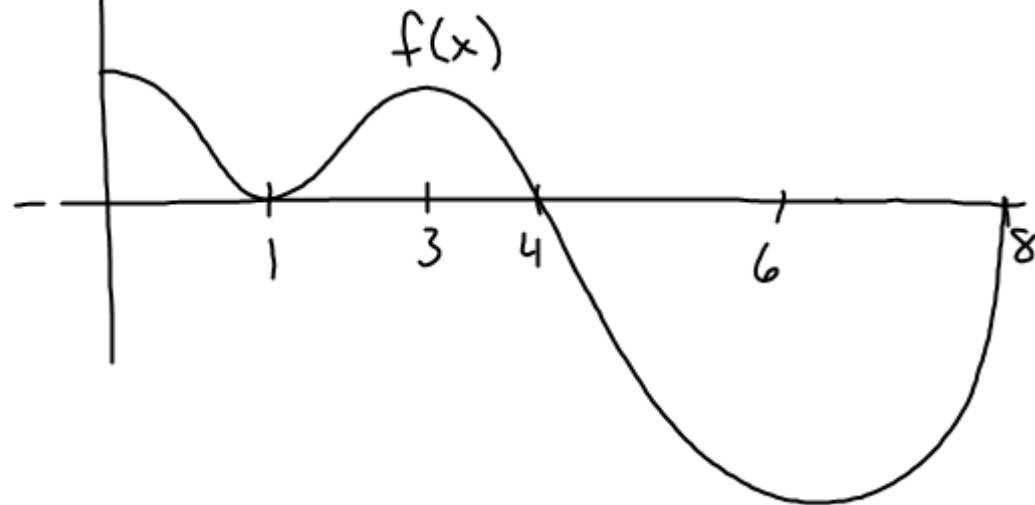
$$T = \frac{h}{2} (y_0 + 2y_1 + 2y_2 + \dots + 2y_{n-1} + y_n)$$

$$h = \frac{b-a}{n}$$

$$T = \frac{\text{LRAM} + \text{RRAM}}{2}$$

$$S = \frac{h}{3} (y_0 + 4y_1 + 2y_2 + 4y_3 + \dots + 2y_{n-2} + 4y_{n-1} + y_n) \quad \text{even \# of partitions}$$

$$h(x) = \int_1^x f(t) dt$$



5.5
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$$T = \frac{1}{2} \left(2(0+30) + 1.2(30+40) + 1.3(40+50) + 1.3(110) + 1.9(130) + \right. \\ \left. 1.8(150) + 2.1(170) + 3.3(190) + 2.9(210) + 3.9(230) + 4.6(250) \right)$$

$$\text{mult. by } \frac{1}{3600} \cdot 5280 = 3344.7 \text{ ft.}$$